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VOLUME 5 NO. 2 | FEBRUARY 1960

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# AUDIOVISUAL INSTRUCTION


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# the EDITOR'S notebook

## Seasoned Observer Doubtful About Technology

WE HAVE RECENTLY had expressions of doubt concerning automation in education from that veteran observer on the audiovisual scene, William F. Kruse. Mr. Kruse's communication was inspired by the November issue of *Education Digest* in which a Washington report comments on the forthcoming publication on teaching machines due from the Division of Audio-Visual Instructional Services in February. (See *Education Digest*, Vol. XXV, No. 3, November 1959, "With Education in Washington," page 52.) The Washington commentator closes his remarks on automation with this statement: "Organized teachers are expected to fight the introduction of the gadgets in the classrooms with the same fervor that 18th-century workers fought the automatic loom."

What concerns Mr. Kruse is that DAVI (as distinct from the Division) avoid appearing as a "protagonist for these 'gadgets.'"

"Whatever information has come to me," he writes, "indicates that they [teaching machines] operate strictly on an abstract-verbal basis, quite contrary to the sensory-realist approach that is supposed to be basic to the audiovisual educational philosophy. It is quite likely that as an administrative matter the audiovisual director, because of his greater proficiency in what might be called 'educational engineering' will be made the custodian of these new 'gadgets.' He carries enough onus now as a gadgeteer or technician rather than as an educator because of his necessary association with the audiovisual 'hardware.' The teaching machine would seem to me to be more hardware, without the saving grace of even being audiovisual."

In replying to Mr. Kruse, we do not object to his position on the relationship of teaching machines and AV personnel, believing that at this stage of the game, anyone's guess may prove to be correct.

We do object, however, to the paragraph quoted from *The Education Digest* and we have said so in a letter to the editor of that publication. Our remarks printed here in part might also serve as a further answer to Mr. Kruse.

"The NEA does not seek to fight the introduction of automated teaching devices into the classrooms," we wrote. "We are anxious that educators be informed about all the new technological developments and that educators judge their usefulness and supervise their introduction into education. It is with this view in mind that the NEA is hoping to inaugurate a one or two-year study on the subject of teaching and learning and technological developments."

The Division publication, which has been undertaken to meet the demand for a comprehensive and authoritative reference source, can be considered a forerunner of this lengthier study. Under the title *Teaching Machines and Programmed Learning: A Source Book*, it is being edited by A. A. Lumsdaine and Robert Glaser, both of whom are actively engaged in research and development projects in this field at the American Institute for Research and the University of Pittsburgh. The editors are bringing together in one source the basic literature in the development of teaching machines and teaching-machine programming (some of it printed in full, some in abstract or summary form). In addition to work already published in journals there will be recent symposium papers and articles prepared especially for this publication. Five main sections will cover: the pioneering papers of Pressey and his students; development of self-instructional training devices in the military services; basic papers of B. F. Skinner and his associates; a group of contributions from diverse sources including papers by Pask, Ramo, Finn, and others. A comprehensive bibliography of all available references on teaching machines, programmed instructional materials, and closely related topics will complete the work.

Inquiries coming into the national office about this publication lead us to believe that there is a good bit of interest in teaching machines and we would like to point out to DAVI members that the Cincinnati Convention affords an excellent opportunity for preliminary exploration. Dr. Lumsdaine, one of the publication editors, will conduct a session, and four companies will exhibit teaching machines. We understand that Dr. Lumsdaine plans to tie in his presentation with the exhibits.

Current and continuing information on developments in this area can be had (free of charge) through a quarterly bulletin, *Automated Teaching*, published by the Rheem Manufacturing Company, 4361 Firestone Blvd., South Gate, Calif.

We cannot agree that DAVI should turn its back on automation, shunning the publication of information and refusing to air its ramifications in open discussion. If this is the course Mr. Kruse would advocate in order to "avoid appearing as a protagonist," then we cannot concur.

As we have tried to point out in recent editorials, automation is imminent. What can be gained by pretending it doesn't exist? Isn't a wiser course for the audiovisual field one which keeps the educator abreast of developments in this area so that when automation comes it will be applied in ways that will do students the most good?—A. L. H.

### Next Month

Are you tired of technology? Bored with pioneering on the "cutting edge"? Worn to a nub from extending educational horizons? Would you like some down-to-earth nontheoretical suggestions—that you can use now in your classroom—or pass on to hard-working teachers in your building? Be sure to read next month's issue of AVI. We've been saving up these manuscripts for months. Everything from sound plans for inservice training to how to use bits and pieces from the local butcher for teaching biology.

• • •

*Producers please note:* Please send films, filmstrips, maps, kits, or other materials for review to Robert H. Burgert, San Diego City Schools, Education Center, Park Boulevard at El Cajon, San Diego 3.

• • •

*Authors please note:* Please send review copies to: Edward T. Schofield, 73 Hubbard Avenue, Red Bank, N. J.

• • •

*The cover and magazine design this month is by Lou Nolan.*

# *Operation Summit Shove*

*AS a final appeal for action before the DAVI Convention at the end of this month, our national membership chairman proclaims February as National Audiovisual Month for attaining DAVI members and has designated it Opertions Summit Shove.*

*Dr. Miller's appeal is two-fold: to state membership chairmen whom he asks to enlist the additional support of others in this final drive; to individual DAVI members whom he urges to get their two new members—if they have not already done so.*

*Florence Fan reports that membership is hovering around 4500—most of the gains coming from a few herculean efforts.*

*Ask yourself today—how difficult would it be for you to get two new memberships—in your building? on your staff? or among colleagues?*

*Why not give Clyde Miller a surprise—to add to the congenial news reported on page 54.*


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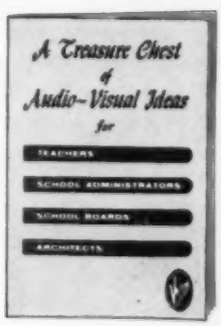


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Science Fiction Today...

# CLASSROOM TOMOR

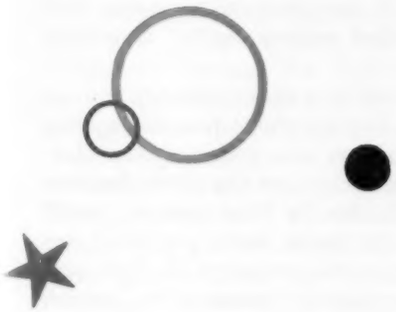
*POWERFUL indicators of technology in learning are reflected in the columns of this issue. In view of rapid changes in our own field in the last five years we can believe Dr. Locke when he tells us his prognostications on these pages are not far fetched.*

*The Learning Resources Institute described on pages 44-45 could not have come into being in any other age. "A major breakthrough in education" (as spokesmen for the Institute like to call it) would have been an incomprehensible term a decade ago.*

*And on pages 46-47 we see the symptoms of rapid change—the search for theory to catch up with events.*

*To advocate or not to advocate technology is not the question—as this magazine has been at great pains to point out—how to be prepared for it, is.*

*The "audiovisualist as gadgeteer" becomes an obsolete notion as the term "audiovisual" decreasingly describes the legitimate pursuits of this field. Gadgetry no longer applies if we accept Jim Finn's concept of technology outlined on page 46 as "ways of thinking, processes, management and control arrangements."*—THE EDITORS



# MORROW

*William N. Locke*

IT IS SAID THAT the science fiction of today is the science of tomorrow. Yet it will not be particularly useful, I think, to describe a distant scene in which young people will have the necessary facts, the elements of mature experience, and the guidelines of sound judgment fed directly to their brains by equipment which simply tunes in on their brainwave frequency, bypassing all the normal receptors for sight, sound, and feeling.

I will assume instead an educational pattern much closer to what we have today where classes of young people of roughly the same mental development meet in rooms with teachers and are led through various topics in such a way as to give them a vicarious experience of a sizeable segment of life, past and present, thus achieving social and intellectual maturity. The purpose of these pages is to imagine the electronic classroom which we can have this afternoon, or at most, tomorrow.

Sound films, tapes, records, and television now provide the means for collecting and bringing into the classroom appropriate selections from the world's languages, art, science, and industry. The means are at hand but the use lags. Why? Because rather than relieving the teacher, all these new media make more work—extra preparation, and the job of getting mechanical equipment to class and running it. The operation of anything but a record player is too complicated, and it may have a distracting rather than an educating influence on the child.

There is another valid reason for disliking audiovisual equipment. It is the poor sound quality of most portable moving picture equipment, television sets, portable tape recorders and record players. Just as a black and white picture is a simplified reproduction of the colors of real life, so the sound that comes out of the loudspeaker of equipment manufactured for home use is a cramped and distorted reproduction of the original sound. Even if it were not, even if reproducing equipment of professional quality were available in the classroom, students and teacher could rarely take advantage of it, for most classrooms are built with no thought of the acoustical quality.

### Sound Conditioned Classrooms

Many teachers have had the experience of trying to teach foreign languages, play music, or sing in a room with such an echo that the sounds were completely distorted. Sound-treating a ceiling and hanging curtains over a bare wall will make an immediate improvement in almost any classroom. Acoustically absorbent material stops sounds from bouncing back and forth. In new school buildings architects should never design rooms with parallel walls. Even two or three degrees off will break up those distorting echoes. No building committee would accept a design with inadequately lighted classrooms. Sound-conditioning is just as important as illumination.

Another reason we must pay more attention to sound is that reproducing equipment makes it possible to play music and voice louder than the teacher's normal voice. It is well known that people with hi-fi equipment tend to turn it up higher to enjoy it more fully. In untreated classrooms that natural impulse will be thwarted by disturbing echoes. Sound conditioning the classroom will allow music and voice to be played loud enough for full esthetic and critical hearing and will also be of help to those with poor hearing. Even in an untreated room properly placed speakers with good quality reproduction will prove their worth.

### Sound Quality

The critical defect of equipment for the classroom is low-quality sound reproduction. Paradoxically, projectors, tape recorders, and the like have more mechanical than electronic failures, yet it is the sound-producing portion which is the least satisfactory. This comes about because the components of the sound system—loudspeakers, microphones, and even amplifiers—are of a design which will not transmit the higher frequencies of the human voice or of music. Until the last few years light weight and compactness, which are desirable for home and classroom work, have simply not been achievable without a sacrifice of high frequencies, and high frequencies are indispensable in distinguishing a substantial proportion of the speech sounds of English and other languages. The invention of the transistor

*Dr. Locke is head of the modern language department, Massachusetts Institute of Technology.*

now allows small, light, efficient amplifiers of any desired frequency response. New ceramic disc loud-speakers and earphones may make satisfactory portable sound systems feasible in a few years. For the present you can be sure that if the loud-speaker in your equipment does not measure at least eight inches in diameter, the quality of speech reproduction will be inadequate for teaching foreign languages.

It is not asking the impossible or even the difficult today to demand that manufacturers produce equipment for schools with sufficient quality to make all the sounds of speech intelligible, as long as it doesn't have to be light, too. It is merely asking for the sort of quality you get on a good FM radio. High quality is denied the public on AM receivers for some incomprehensible reason. A rule of the Federal Communications Commission limits the frequency response of AM receivers to 5000 cycles. At the risk of being technical let me simply repeat here (what is more amply developed elsewhere *) that specialists in acoustic phonetics and linguistics consider that adequate frequency response for speech is flat from around 325 to 8000 cycles, flat ± 3 db with noise down 40 db or better. Distortion and flutter (wow) not to exceed 1 percent and .5 percent respectively. Incidentally, these specifications result in reproduction of music with a quality high enough to please all but the highest hi-fi bugs.

A word of explanation as to how it is that AM radio, and telephones for that matter, can operate satisfactorily with only 60 percent of the fidelity which is considered necessary for speech transmission by the experts. This lies in the fact that the purpose of a communications system is different. All that is needed is for the listener to get the message. Listening to our own language we can predict the next word with better than 90 percent accuracy. This means that we do not have to hear the next word very well to know whether it is what we expected or not. As soon as we have identified it we mentally predict the next few. Only in the rare case where a word is quite unexpected may we sometimes have to revise the interpretation already assigned one or more preceding words and listen more carefully.

In noisy surroundings like a cocktail party or a bad telephone line the message still gets through until the noise or distortion gets too extreme. The reader's own experience will remind him how at that point people tend to simplify their conversation, reducing it ultimately to single shouted words accompanied by appropriate gestures. The implications of these facts may not be obvious. In our own language we bring to bear two types of information in interpreting what we hear: (a) our knowledge of what the other person is likely to say in a certain situation and (b) our complete familiarity with the language patterns in which anything may be said. In learning a language, the listener has less experience on which to base a knowledge of what someone may be trying to say, while the beginner has none at all with the patterns of a new language. If, as a meeting breaks up, I call across the room, "Where did Henry go?" John may only hear the word "Henry" and may gather that it is a question either from the intonation or from the questioning look on my face. If in his reply I can only make out the word "car," I do not need to hear the rest to know that Henry has probably gone to get the car. If the probability seems high enough, I shall be satisfied without further communication.

In a foreign language this sort of fragmentary conversation is much harder. The telephone provides a clear case. Even those Americans who speak another language quite well hesitate to do it on the phone because it is so difficult. It is harder for three reasons, which will bring us back to the point; first, you can't see facial expressions and gestures, or watch the lips; second, the telephone incompletely transmits the speech sounds; third, you are handicapped by your insufficient knowledge of the sound patterns and word patterns. With limited knowledge of the language the learner needs every bit of the sound to work with. Any noise or distortion, any loss of the upper or lower frequencies, as on the telephone or the sound systems now in use in classrooms, makes the learning process ever so much more difficult. It amounts to the imposition of an artificial hearing loss as high as 40 percent.

Having established the criteria and need for high quality sound systems in classrooms we can proceed to electronic equipment for the classroom of the future. None of it is yet available in a satisfactory form. Yet given the size of the school market, it is my belief that the equipment described below can be manufactured right away and sold at a price which will pay development costs, with the possible exception of two items—the Telescreen and the Auto-Corrector.

### Tape Recorder

Tape recorders for classroom use should be light (under 15 pounds), compact, sturdy, capable of playing selections up to an hour in length, with stereo sound consistent in quality with the specifications mentioned above. Controls should be simple and positive acting. The operation should be as simple as that of a standard typewriter. It should be possible to run the tape forward or backward, and a counter or indexing device should permit the location of any point in an hour's reel quickly. The ideal machine would require no threading and no rewinding. It should be possible simply to drop a box or spool containing the tape into a slot. Starting and stopping should be practically instantaneous. All moving parts should be permanently lubricated for the life of the machine. Brakes (usually the weakest link), belts, and all mechanical parts should be designed to operate without service for a minimum of a year and preferably for the life of the machine, which should be at least five years. The amplifier should be transistorized and preferably of a plug-in type that can be replaced by anyone, should a breakdown occur.

### Projector

Except for the addition of the magnetic soundtrack, motion picture projectors have not changed substantially in 50 years. The projector for classroom use should be noiseless in operation, should run cool, and require no

* William N. Locke, "Ideal Language Laboratory Equipment," *The Modern Language Journal*, Vol. XLIII, No. 1, January 1959, p. 16-18.

threading. Ideally all films should be endless loops requiring no rewinding. By a revolving turret lens arrangement the projector should accommodate filmstrips or 2x2 slides as well as reel films.

No shutter should be used and the film should not be made to move intermittently past the aperture—the source of most of the noise and breakage in present-day projectors. Instead the light source should probably be a flash tube, flashing at a speed appropriate to the movement of the film, achieving the same result as we have today with the antequated shutter and Geneva movement. Sound quality should be according to specifications above with a provision for stereo sound. All mechanical and electronic components should be designed for long life and a minimum of maintenance. Moving parts should be permanently lubricated. The projector should be light and compact.

A few years farther away is the electronic projector, which is a film or tape reader converting moving-picture film or video tape into electronic impulses to be reproduced in the form of pictures and accompanying sound on the Telescreen.

### Telescreen

With apologies to George Orwell * for the use of the name, the telescreen is about to become a classroom adjunct. The model described here is unidirectional: it will project pictures but will not photograph what goes on in the room. The telescreen is about two inches thick. It hangs on the wall. Electronic impulses from open or closed-circuit TV, film, or the tape reader described above are fed to the bottom and one side of the screen. These impulses activate elements in a straight line vertically and horizontally, and at every point where two impulses meet, light is produced. It is amplified by a bed of multipliers which form the thickness of the screen, and become visible on the surface. The result is similar to that of a picture on a movie screen except that the room need not be darkened.**

The telescreen has another valuable application. It can replace the blackboard. In its first form only black and white pictures and writing will be possible. Later on the Colorscreen will give us colored pictures and let us use "colored chalk," so to speak. One principle that can be used for writing on the screen is the pantograph which is used in hotels and stations. You write what you wish to say with a stylus on a metal plate. The motions of the stylus are transmitted electrically to any remote location and reproduced by a pen moving over paper. Similarly, a stylus at the teacher's desk will permit anything to be written on the telescreen electronically. With the colorscreen the color of the image can be changed at will by pushing a button.

### Electrostatic Blackboard

Less distant than the use of the telescreen as a blackboard is the electrostatic or electromagnetic blackboard. It seems probable that one of these two principles will soon be used to provide a blackboard which can be wiped clean by the touch of a button. The basic principle in both cases is the attraction of particles from a special chalk or pencil. When the board needs cleaning, the attractive forces holding the particles in place will be reversed by a touch of the button, repelling the particles, which will then fall into a chalk tray. Combinations with the telescreen principle or the cathode ray tube principle are also possible. One could write on the surface with a magnetized pencil and every spot, as it was magnetized, would light up. Erasure would again require only the touch of a button.

### Electronic Nerve Center

Starting with the bells and time clock and developing with the PA system and the intercom, an Electronic Nerve Center for schools is taking shape. With the advent of in-school television, either closed or open circuit, the Nerve Center will have increasingly important functions. Video programs originating in the school or outside will be piped to this Center and then distributed to sets, projectors, or telescreens in the classrooms. In the Center there will have to be facilities for recording programs on video and audio tape, for playing back, and for storage of tape.

As school TV is extended the sound can be recorded and used separately by the teacher for practice work, for demonstration, for study of detail, and for testing. This means that in the classrooms, too, there should be tape recording facilities. Connections from the Nerve Center to classrooms and other appropriate areas will be by coaxial cable or other high frequency circuit. Connections between schools will involve coaxial cables or microwave links terminating in the Nerve Centers. Each school is clearly going to require a sound and TV technician to operate the Center. All new buildings should be designed with built-in ducts leading from the Nerve Center to the various rooms so that the necessary video

*(Continued on the next page)*

* Editor's note: The author refers to Orwell's novel, *1984*.

** Editor's note: The Phonoscope is a development along these lines.

and audio cables can be installed and perhaps replaced by others as more advanced designs appear.

### Language Laboratory

The future of language laboratories holds promise of changes. Everything is experimental today. New methods, new materials are being developed. Equipment is in a state of flux. It is an unfortunate fact that the schools which had the first labs and have therefore had the most experience in developing new techniques of language teaching now find their equipment antequated. We are just learning that the deplorable sound quality of most of the earlier equipment prevents the transmission of many sounds even of English. The lab is a useful tool for accustoming students to hear another language and to speak it, but the equipment must not be so poor as to limit the student to half-good pronunciation.

The future of the language laboratory undoubtedly holds completely automatic remote-controlled installations, meeting the criteria of long life, low maintenance, high quality, and simplicity of operation. Flexibility of equipment is highly desirable, so that it may be adapted to combinations of languages and levels and used by individuals or whole classes. But flexibility means complexity. The only way to reconcile flexibility with simplicity of controls is automatic operation.

Completely automatic language laboratory equipment is a distinct possibility. By building a system around a cartridge which never has to rewind, since beginning and end are spliced together to form an endless loop, a lab can be built without a single knob or button for the student to operate. This is possible in either of the two basic types of language laboratories—the listening lab and the listen-record-playback lab. In the listening lab, whether earphones or loudspeakers are used, the teacher or technician can simply drop the cartridge into a slot and the selection will be repeated as often as desired. In the more complete installation automation means that precisely how the cycle shall proceed must be decided in advance. The simplest arrangement would be a two-cycle operation. First the selection is played and dubbed on the student's recording channel simultaneously with the student's responses. In cycle two the machine automatically plays back everything on the student's recording channel. At the end of cycle two, cycle one starts again, and so on.

Complete automation of the type described is of questionable utility. For one thing, different individuals require different loudness in their earphones. This means that each student must be provided with a volume control for his own earphones. Also, many teachers will want the student to exercise some control over when he starts to record and when to play back. If so, he must have a second control, a switch. In most existing labs there are many more knobs and buttons, but each additional control imposes a new demand on the student's attention, introduces another chance of making a mistake, and interferes that much more with the learning process.

Fortunately the increasing market for language laboratories in the schools is drawing new manufacturers into the field. Competition will be intense over the next few years and the consumer will benefit from a rivalry which can be expected to produce really interesting advances in equipment.

The advantage in realism of stereophonic sound can be brought to the lab by doubling the number of channels per student (with a doubling of cost). Experimentation will show whether it is worthwhile. Wireless language laboratories are possible too, in which students would pick the recorded selections off the air, with each student having individual record and playback on his own frequency. Portable transistorized sending and receiving sets could be used by students at any location within miles of the electronic nerve center where the transmission, receiving, recording, and playback would be done. This is possible today, but the cost would run over $1000 per student.

The ideal language laboratory should combine high quality equipment for audio work with the new design of visual aids mentioned earlier.

### Auto-Corrector

A new device with applications to the teaching of pronunciation will be coming out of the laboratory sometime in the next few years. At first it will certainly be too expensive for school applications. It is mentioned here because of its interest to language and speech teachers and because the history of electronic devices shows rapid simplification and a corresponding drop in price.

The auto-corrector will evolve out of research in speech analysis. The present goal is to learn how people discriminate among speech sounds by making a machine that will do the same thing. A machine which can recognize speech sounds can flash a green light when the sound is right, a yellow light if it is a little off, and a red light if it is unrecognizable in terms of the sound pattern of the language in question. It should be able to do the same thing for words and for sentences, flashing a warning whenever the speaker deviates from the "standard language." When such a machine is built, it will be possible to tune it for any language or for any dialect which can be described. The problem now is that no language or dialect has been adequately described; so work on the machine and on the description of languages are proceeding hand in hand.

The application of such a machine to speech correction or to pronunciation of a foreign language is obvious. It could be centrally located and wired to the language laboratory and other classrooms.

It is interesting to note that it was years after Jules Verne wrote *Twenty Thousand Leagues Under the Sea* before a modern Nautilus was able to do the things he predicted, but nowadays, either the tempo of the application of science to everyday life has speeded up tremendously or we simply don't have the vision to see far ahead into the future. The predictions of science fiction are coming true with astonishing rapidity. The time scale has been compressed. As soon as a concept is born in science it is quickly applied to daily life. These are the next steps forward in electronic classroom equipment. I am convinced that they can and will be realized in the near future.

# FIRST TASTE OF TECHNOLOGY

## *A Sunlight Projector in Afghanistan*

GETTING THEIR FIRST TASTE of "learning technology" in the photo above are a group of Afghan schoolboys clustered around a sunlight projector developed by two Americans on an educational mission in Afghanistan and an Afghan who has studied in the United States. At left Gerald F. Winfield, chief of the ICA Communications Media Staff, inspects the projector, an unprepossessing object made out of an oil can and costing as low as $5 in some areas. What the projector means as a first step in ushering in the mass media for education in underdeveloped areas cannot, however, be measured in dollars.

Holding the hooded, acetate rear-view screen which accompanies the projector is V. Roxor Short and on the left, James A. Cudney, educational advisers for ICA in Afghanistan. Both are "co-inventors" of the projector with Muhammad Karim Towfique, an Afghan educational specialist who received his instructional materials training in the United States and who originated the idea for the projector.

Housed in a standard one-gallon oil can, the projector utilizes a mirror, two eye-glass lenses, a cardboard or plywood box, a condenser, and a piece of acetate—plus sunshine. Only tools required are a soldering iron and pair of tin snippers.

Cudney and Short were inspired to develop the projector when they discovered that the use of conventional projectors in Afghanistan was limited to the capital city of Kabul and its immediate environs. In rural areas and remote towns there is no electricity to operate a standard projector. But there is plenty of sunshine.

The projector can be used outdoors or inside a schoolroom if placed near a window. ICA is already preparing filmstrips to be used in both primary and adult instruction in classes covering public health, disease control, agricultural techniques, sanitation, and literacy. Through the U.S. missions in underdeveloped countries ICA distributes blueprints and instruction manuals for making and using this ingenious device.

ICA has great hopes for its sun-powered projector in those broad areas of the world where electricity is unknown and even pencil and paper are rareties. It can be utilized in a combination filmstrip and textbook in which poor quality paper can be used for text with filmstrips providing illustration. As part of what Dr. Winfield likes to call a "poor man's television," it can project slides or filmstrips in combination with a transistorized radio operated by flashlight battery. By the latter means one skilled teacher can serve a large number of children or adults.

Thus international cooperation bolstered by man's ingenuity bypasses the "age of electricity" in its relentless drive against illiteracy.

# ARE THERE ANY QUES-TIONS

*E. DeAlton Partridge*

IN THAT DELIGHTFUL play *The Male Animal* by Elliott Nugent and James Thurber there are a number of pointed incidents relating to the academic life and the teaching process. At one place in the play the diminutive professor who is the hero of the piece is building himself up to defending his mate against the amorous advances of an oversized football player. After fortifying himself with a number of drinks, the professor delivers a lecture to his friend on the role of the male animal in defending the female. He reviews the actions of the male tiger, the elephant, and the sea lion in this process. And finally after completing his lecture during which he works himself up to quite a state he takes off his glasses and calmly asks his friend "Are there any questions?"

Any good teacher realizes that unless he arouses students, motivates them, causes them to want to learn, his teaching is apt to be sterile. The great teacher does not necessarily impart information. There are many sources to which a student may turn for information. The job of the teacher is to cause the student to seek information and insight. A great teacher will stir his students so that learning and seeking will take place long after the actual contact with the teacher is over.

Even the dictionary distinguishes between "teaching" and mere "instructing." To teach is "to show, guide, direct." To instruct is "to impart knowledge." Instruction is only one part of the total teaching process.

When the writer was a graduate student at Teachers College, Columbia University, E. L. Thorndike was conducting some of his experiments on human learning.

One day he came to class and read a series of statements. Some of these statements were complete, others were not. Several days later he asked his students to write down any of the statements they remembered from the previous visit. Tabulations of the results indicated that the unfinished statements were more often remembered than the finished ones. This finding would not surprise followers of the Gestalt psychologists who have contended for years that one of the important things about learning is the tendency for human beings to complete experiences and eliminate dissatisfactions aroused by uncompleted structures.

All of this has a direct bearing on the production of visual aids, especially slide films and motion pictures. Unfortunately there is a common tendency to feel that a visual aid is good when it simply pours forth information. That is to say when it arouses no questions that it does not answer or when it does not arouse any questions at all. This simply makes the film a vocal textbook and not a real teaching device. In order for the slide film, motion picture, or television program to do its best as a teaching device, it should probe into the students' minds and cause them to become dissatisfied with their present knowledge and to raise pertinent questions which in turn will motivate them to pursue certain lines of learning long after the film has been presented. The common pattern in film production is to have an unrecognized or unidentified voice pour forth information telling the students what is so and what is not so, leaving little to the imagination of the teacher

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and leaving the students completely undisturbed with regard to their present state of learning.

In a recent conference of scientists interested in the teaching of physics in high school, there was considerable discussion with regard to the necessity of re-editing a series of films that had some minor mistakes in them. After a lengthy discussion, it was pointed out that these common human errors are probably some of the best teaching devices in the film. The best way in the world to have students pay attention would be to warn them that there might be slips of the tongue and mistakes in writing on the board. Just why we assume that a teaching device must be completely content-filled, pouring forth information, leaving no questions or leaving no unanswered problems, is difficult to understand. Film makers and those who produce visual aids would do a much better job of educating if they would recognize the validity of raising questions rather than simply reciting facts. In this connection some of the films produced in Canada have been excellent. They have created situations leaving the audience in mid-air with regard to the outcome.

One does not need to turn to the experimental evidence in psychology to test the hypothesis that the unanswered question is better than the answered one in the educative process. How many times has one found himself humming or whistling a tune over and over again after having turned it off in the middle of a radio program, or how many of us in our early high school or late grade school years were confronted with the project of having a story partially read and then being asked to finish it. In most cases we can remember the details of the story up to the time that it was suddenly cut off and thrown into our laps.

Some notable attempts are being made to break away from the stereotype of "telling aids." If you are interested in seeing a good example of filmstrips based on the principles outlined above you would do well to take a look at the filmstrips distributed by the Conservation Foundation—*Demand, Supply,* and *Balance*. This series, produced by Impco Productions in Tuxedo, New York, was developed with considerable care and skill. The strips were deliberately planned to leave the student with a desire to learn more. These are teaching aids in the true sense of the word. They *assist* the teacher but do not displace her. Instead of closing the learning experience they open it up for further development.

If visual aids are to be true *teaching* aids instead of *instructional devices,* they must do more than provide information. They must motivate, inspire, disturb and *cause* learning to take place. Teachers who use visual aids must realize the validity of the question as a teaching method.

## EDITOR'S NOTE

THE INFORMATION IN THIS COLUMN is taken from the three teacher's guides written for the Conservation filmstrip series cited by Dr. Partridge. The guides themselves are comprehensive and, as far as content is concerned, could substitute for a preview. Every frame is reproduced with suggestions for the teacher.

The nine filmstrips are designed in groups of three, repeating at each grade level these three concepts—*demand, supply,* and *balancing demand and supply*. Titles are: *What We Need, Where We Find It,* and *How We Get It* (for young children); *The Demand, The Supply,* and *Balancing the Supply and Demand* (junior high); and for senior high—*Can the Biologist Meet the Demand? Can the Chemist Renew the Supply?* and, *Can the Physicist-Engineer Strike a Balance?*

The first filmstrip (for young children) points up the need of every living creature for food, water, fresh air, and space. Other specialized needs of modern living are brought in — fuel, metals, power, and so on. The second strip develops the concept of interdependence; the third shows that all demands for material things must be supplied by the earth and that the supply is not inexhaustible. The inventiveness of man is introduced, but the fact is made clear that there is no substitute for water. There are no "end" titles; each strip ends with a series of questions.

The series for junior high uses figures to show the immense consumption of goods in the United States and relates these facts to the teen-age viewer by giving some idea of what the depletion of resources will be if his (and every other teenager's) anticipated demands are met at the age of 30. The senior high series, as the titles indicate, takes up the contribution of the biologist (cross-breeding of food plants); the chemist (adding nitrates to the soil); and the physicist-engineer (who by his inventions has also contributed to mechanization and urbanization). The last strip also takes up the problem of population explosion and asks: Where will all of this end? The series has no pat answers. Supply and demand will only be balanced, says the guide, if the "adults of tomorrow understand and accept new concepts of resource use and distribution."

For evaluation see *Ed Screen* for March 1959 (by Irene Cypher) and *Teaching Tools* for Winter-Spring 1959 (by John C. Schwartz, Jr.). The filmstrips are distributed by the Conservation Foundation, 30 E. 40th St., New York. Complete series, $49; per set of three. $18.

# LEARNING RESOURCES INSTITUTE ANNOUNCED AS MAJOR BREAKTHROUGH FOR BETTER LEARNING

BY ALICE FINSTAD

A PROMINENT EDUCATOR remarked that the incorporation of the Learning Resources Institute announced to the newspapers December 21 coupled with the implementation of the National Defense Education Act now in progress probably will do more to move the instructional materials field forward than have the combined efforts of dedicated audiovisualists thus far. This was not intended to belittle the endeavors of those who have labored long in the vineyard; the educator was merely referring to the catalytic effect of government and foundation support. (According to information released to the press, the Institute is a non-profit corporation supported by "private industrial and foundation sources"; it is well known, however, that Ford funds play a heavy role.)

John E. Ivey, Jr., an educator who believes in direct action, as AVI attempted to point out last month in a report of his appearance as one of the major speakers at the forthcoming Cincinnati Convention, is president of the Learning Resources Institute. According to the first press releases the Institute represents a joint effort of leaders in education, business, and philanthropy to seek a major breakthrough for improved education on a world-wide scale. In making this "breakthrough" the Institute is "relying on a new marriage of the science of the learning process with the technology of modern communications."

The Institute is an outgrowth of the experience with Continental Classroom, the network physics course for teachers. When success of the program became assured, the American Association of Colleges for Teacher Education, originator of Continental Classroom, felt that a separate organization should take over its operation. As plans progressed it became evident that there was work for the incipient organization far exceeding a single TV course. A wide range of learning resources needed looking into. Dr. Ivey has said that the Institute is "striving for a breakthrough in education on a scale comparable with that of recent years in medicine, agriculture, and industry."

Emphasis will be on new tools for learning with the requisite review of learning research and theory to precede them. At the same time the Institute will devote much effort to existing tools—television, films, radio—and to those just arriving on the scene—learning machines and innovations in the use of written materials of all types. Inherent in these objectives are new approaches to relating learning to educational communications in order to multiply the efforts of student and teacher alike.

Specifically the Institute will undertake these projects:

- Establishment at Princeton, New Jersey, of a center for research, development, and demonstration of new technological improvements for the learning process.

The Institute directors expect the Princeton center to become a showplace where the latest in instructional materials and equipment will be demonstrated for educators and laymen from the United States and abroad.

● Provision of specialized educational services to schools, colleges, and universities. These will include the development of texts and syllabi to accompany televised, filmed, and taped courses, as well as consultant services to schools, colleges, and regional groups. Courses produced on video tape by the Institute also will be made available on kinescope film to schools, colleges, ETV stations, and libraries.

● Production of a variety of courses on film or video tape—at elementary and secondary levels—and courses for credit at college level. These are designed for use on television networks and ETV stations, over the Midwestern airborne TV experiment, and in educational programming. The Institute contemplates additional teacher-education courses under the Continental Classroom project and also has a five-year plan for producing 15 network television courses constituting the basic core of a liberal arts curriculum for undergraduate college students. These will be available also to ETV stations, schools, and colleges. Negotiations have begun with the networks for presentation of several of these courses next year, although final decision on subjects have not been made.

# AKTHROUGH

The Institute is participating in the Midwest airborne television experiment by supplying staff services to the Midwest Council on Airborne Television Instruction. The airborne experiment (described in the November issue of AVI) plans eventually to telecast as many as 72 full-year courses from an aircraft at high altitude covering portions of Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin, an area which holds a potential "classroom" of five million students in 13,000 schools and colleges. The Institute is also exploring possibilities of adapting the airborne television technique used in the Midwest to underdeveloped countries which are seeking ways to break through the "illiteracy barrier."

Members of the Institute's board of directors (besides Dr. Ivey) are: the chairman of the board, Oliver C. Carmichael, former president of the University of Alabama; James E. Allen, Jr., commissioner of education and president of the University of the State of New York; Clay P. Bedford, president, Kaiser Electronics Corporation; Samuel M. Brownell, superintendent of schools, Detroit; Milton S. Eisenhower, president of Johns Hopkins University; Palmer Hoyt, publisher of the *Denver Post;* Bruce Miller, superintendent of schools, Riverside, California; J. L. Morrill, president of the University of Minnesota; E. DeAlton Partridge, president, Montclair State College (New Jersey); Edward L. Ryerson, formerly chairman of the board, Inland Steel Company; W. Homer Turner, executive director, United States Steel Foundation; Herman B. Wells, president, Indiana University; John F. White, president, National Educational Television and Radio Center; and, Benjamin C. Willis, superintendent of schools, Chicago, and president of the Educational Policies Commission of the NEA.

Constituent members announced to date are: American Association of Colleges for Teacher Education; American Association of Junior Colleges; American Association of Land-Grant Colleges and State Universities; American Association of School Administrators; Association of American Colleges; Council of Chief State School Officers; National Association of Educational Broadcasters; National Educational Television and Radio Center; and the State Universities Association.

[The NEA, which has been invited to become a member, can take no action to accept until after a meeting of its executive committee this month.]

The Learning Resources Institute can be considered another powerful indication that technology in learning is inevitable, as witness these words from the Institute president: "One of our chief aims is to provide high-quality content material through modern means of communication. This will enable us to make subject material more vivid and real, encourage the maximum independent effort by the student and free the teacher's time for greater personal attention to individual needs. It will be done by cooperating with schools, colleges and communications industries to develop new systems of media which are geared to sound educational concepts and to sound principles of economy.

"The classroom teacher can have a new assistant—the television instructor who is supported by a wealth of equipment, audiovisual aids, and abundant time to prepare to assist the classroom teacher. Under guidance of the classroom teacher, the student can learn in a new environment aided by the work of the nation's great teachers on television, learning machines, records, tapes and other technological development . . . The Institute is founded on the belief that only by looking at these media in patterns or systems of use for the school or college can their full value to education be realized.

"The Institute likewise believes that by continuous and careful study of the learning process and advances in engineering science new systems of learning media can be devised for educational use and new media invented and developed specifically for educational purposes."

Dr. Ivey has promised to center his Convention remarks at Cincinnati on what the Learning Resources Institute portends for education. In view of DAVI's present inclination towards "learning technology" (as heralded by the writings of organization leaders *) his message should be more meaningful than ever to members.

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* See Ann Hyer's editorial series begun in the January issue of this magazine—to be resumed in March—and Jim Finn's article in the winter number of *AVCR*.

# NEEDED: A MATERIALS THEORY FOR A TECHNOLOGICAL AGE

*by Chandos Reid and O. L. Davis, Jr.*

*Dr. Reid is assistant to the superintendent, Waterford Township Schools, Pontiac, Michigan and chairman of the ASCD Commission on Instructional Materials. She is director of the ASCD project of which the Seminar described here is one phase. Dr. Davis is associate secretary, ASCD, and coordinator of the project. A detailed report of the Seminar is in preparation and will be announced in this magazine upon publication.*

"WHAT'S AHEAD?" has become a priority question as attention is given in many quarters to an assessment of the purposes of American education. Many have recognized the necessity of examining the role of the various instructional materials and resources in relation to the purposes for their use. Probably no element of the school is as sensitive to the rapid changes in learning and in technology as is the field of instructional materials. Each new development presents an emergency-type situation with which educators must deal. The rapid accumulation of knowledge in the subject disciplines presents problems of consequence in planning for instruction and in the use of materials.

The need is apparent for a statement of theory and purpose of instructional materials which will influence future developments in a number of areas such as designs for the school curriculum, uses of new educational media, the teaching-learning process, design of school facilities, and patterns of school organization.

One attempt to formulate such a theoretical framework is a current project of the Association for Supervision and Curriculum Development. Proposed by its Commission on Instructional Materials, the project was recommended by the Joint DAVI-AASL-ACRL Committee to the U. S. Office of Education for support under Part B of Title VII. It is being conducted with funds contracted under provisions of the NDEA. The first of two invitational seminars planned under the project was held in Washington, D.C., November 10-15. Participants included instructional materials specialists in both printed and audiovisual materials, general curriculum workers, school administrators, classroom teachers, and specialists in the subject fields, including some who are engaged in nationally prominent curriculum revision efforts.

What is the impact of current revolutions in technology, the science of learning, and the expansion of knowledge on instructional materials, their development and use? Obviously, present patterns of materials development, organization, and usage must change in face of the forces generated by these revolutions. Preparing advance working papers on these and other problems and serving as consultants during the Seminar were James Finn, University of Southern California; Roger Leatherman, University of Michigan; and Donald Snygg, State University of New York, College of Education, Oswego.

Technology, said Finn, is more than machinery; it includes ways of thinking, processes, and management and control arrangements. He pointed out that while industry responded dramatically to modern technological forces, education and instructional technology has remained at a pre-industrial stage. Today, instructional technology has two distinct elements, that which emphasizes mass education, using materials and media such as film and ETV, and that which focuses on individual instruction, employing teaching machines and similar devices. Technology presents the theoretical possibility of eliminating the teacher and the school; yet it also presents opportunities for a wide variety of alternative patterns of teaching and learning.

Finn outlined the importance of a systems concept in education. He illustrated this idea by describing an automated classroom under the control of the teacher, "which would have total light and air control, automatic projection and television systems, technical provision for the best possible discussion environments, display situations, etc., which could be changed at will. By planned programming the classroom could be made to function for major presentations, small group discussions, individual work at teaching machines, creative periods, etc. All of this *could be* under the control of the teacher. The classroom then would become the teaching machine." This type of automated system would be one in which man could control the machines and not the frightening reverse.

Commenting on recent research in learning theory, Snygg pointed out that the teacher conceivably can be replaced by a teaching machine. This is possible if the purpose of education is "to teach what is already known, to promote conventional, conforming behavior, to prepare pupils to live in a world exactly like the one in which they are educated . . ." Another idea of learning, he said, is necessary if the desired outcome of education is "a creative, adaptable citizen, able to deal with problems his teachers could not have envisaged and with problems they were unable to solve. Snygg proposed a learning theory based on the premise that a person's behavior is always appropriate to the situation as he perceives it at that time. One learns,

therefore, when he has achieved a clearer perception of the situation with which he is dealing.

Snygg called for more adult specialists to help learners by suggesting alternative possibilities, for larger stocks of materials and space in which to use them in schools. To encourage the desire to learn, materials that can be "wasted" in exploration or practice should be available. Many opportunities should be available for learners to test their interpretations in realistic situations. Snygg also underlined the necessity of learners to have immediate knowledge of the results of their behavior.

Drawing his examples primarily from science, Roger Leatherman commented that most of the science curriculums in schools "stand as a kind of ironic joke on educators and scientists alike, for they are totally nonpertinent to the problem situations of modern scientific life." He pointed out that the rapid accumulation of knowledge has rendered obsolete many ideas and methods formerly held to be essentials to understanding. New and different concepts and information, and new systems of analysis are necessary to one who wishes to advance into the future. Leatherman further commented that "in exactly the same way man has made obsolete his earlier meaningful theme of qualitative chemical analysis, he will at some later date make obsolete the integrity and meaningfulness of atomic energy. Of this we may be sure."

To highlight only a few of the ideas in the working papers is hardly fair to their authors, but it serves to illustrate the focus which the papers provided for the Seminar. Discussions during the Seminar delineated a number of concerns, issues, and questions about the development and use of instructional materials. No consensus was desired in the group, but several impressions were evident.

The impact of technology on instruction should not be viewed as an "intrusion" but as new and liberating resources for teaching and learning. Its promise will be realized, as Chester Babcock of the Seattle public schools summarized, "only as we succeed first in defining or redefining our educational goals and values." While education for survival is important in today's world, other equally valid goals exist such as the excitement of learning and basic humanistic values.

### Can Teaching Tools Become Obsolete?

Frequently during the Seminar, individual materials and media were analyzed. Television and teaching machines received extended attention. Strengths and limitations of the various media were discussed. Are the older media and materials obsolete in light of the developments of the newer media? The point was made repeatedly that each of the media and materials should be used for the particular situation in which it can make the greatest contribution, that is, a cross-media approach to usage. With a systems approach to usage and the introduction of much new instructional technology, the traditional concept of instructional materials probably needs to be revised.

Concern was expressed that the media, both old and new, may freeze into the educational system content already outdated. This real danger, it was pointed out, is not inherent in the media but is a misuse of the media and an abuse of the learner. New knowledge must be made suitable for use through the media and much knowledge that is not new but nevertheless relevant must be restructured as is being done in many current foreign language instructional programs.

A crucial area of concern for the Seminar participants was the question of control. Who determines educational values and goals? Is local control of curriculum, long held a basic tenet of school operation, to be abrogated by systems of media that know no jurisdictional boundary? Who programs? Who controls the learning opportunities in a school system, in the building unit, in a classroom? Answers for such vitally important questions as these are basic value decisions and the Seminar offered no easy solutions to them. Participants did insist that a theory of instructional materials must deal with fundamental values and goals. The Seminar emphasized that an instructional materials theory should focus on the learner and his development and the learning process. The learner's needs and opportunities must appear prominent in plans for materials usage.

In practice, the further away from the immediate learning situation control of the use of instructional materials is found, the more rigid and formal is their use. Pleas for flexibility were voiced in the Seminar. Various plans to consolidate, to standardize, and package materials and media under the aegis of groups not responsible directly to citizens and boards of education were viewed by many as cause for serious concern.

The traditional role of the teacher as a dispenser of knowledge may well have to be recast in view of the developments in technology and other realities in American society. The nature of knowledge is such that no person can assimilate enough to know all the answers. Certainly, presentation of information must not be equated with teaching. The use of technology holds the promise of greatly extending each teacher, giving him new materials and resources with which to guide and foster learning. Materials to be *used* and not to be *followed* by teachers will help teachers define a more adequate, professional role.

Not only were the roles of learner and teacher reviewed, but so were concepts of school organization, courses, time allotment, the classroom, and school building planning. The Seminar foresaw greater attention to education goals, procedures, and materials in these areas in the future than has been given them formerly. Pre-service and inservice education of teachers must include opportunities to acquire relevant knowledges and skills regarding new developments in learning, in the subject fields, and in instructional materials more rapidly and effectively than they have in the past.

Theory is not developed quickly. The ASCD Seminar on a Theory of Instructional Materials did not arrive at final, definite conclusions. An important beginning was made toward the eventual erection of a sound philosophical framework for the development and use of educational media and resources. Subsequent seminars of this ASCD project will be able to build on this initial effort.

# Time Out/for EX

*THE DAVI Convention, as Erv Nelson comments, is a gathering of leaders of both suppliers and consumers in the audiovisual field. The national staff has good reason to think that in the past the "supplier" side has had less attention than warranted by the money, time, and talent expended on the DAVI exhibits. In the hope of rectifying this situation, Conference Coordinator Mickey Bloodworth this year invited the exhibitors to make their views known to AVI readers in time for the Cincinnati meeting.*

*We think the interchange between suppliers and consumers of audiovisual materials and equipment becomes even more important now as technology increasingly makes its way into the classroom. Hence we are happy to print the views of these four exhibitors who complement one another but who at the same time voice a common plea—"Spend some time with us."*—THE EDITORS.

## An Open Mind, That's All We Ask

A SHORT SPAN of seven years ago, educational film producers, equipment manufacturers and others of us responded with enthusiasm to our first opportunity to participate in your National DAVI Convention, filling every available corridor and corner space on the mezzanine of St. Louis' Hotel Jefferson.

Most of your 41 exhibitors in 1953 have returned each year since, including the trip to far-off Seattle last April. Joined by others there to swell the total to 65, we filled the Grand Ballroom of the Olympic Hotel. Next March in more centrally located Cincinnati there will be 130 of us, each one hoping for an opportunity to see and visit with you.

Commercial representatives will agree that the record of DAVI registrants for friendly acceptance and hospitality has been excellent. With one exception, our criticisms have been limited to temporary problems, such as location and hotel services. The exception is our feeling that our exhibits have not yet attained the importance that many of you give our representatives when they call on you "at home."

Your headquarters staff, officers and convention committees are not remiss, having taken action each year to give the exhibits a more prominent place in your program. The number of exhibit hours has been increased, and a free afternoon for exhibits with no program conflict has become an annual feature. Only you can supply the attention we want, through the time and interest you give. If your convention schedule permits you to observe this "rule of three" your exhibitors will consider their time and expense recompensed:

1 Come and see what we have to show you

2 Look at our wares with an open mind

3 Plan to visit long enough for an identification of interests and an exchange of names

Many of you apply these rules instinctively. You can be proud of the important push you have given to the improvement of teaching materials and equipment. Think for a moment about the progress you've seen at DAVI conventions during the past seven years. I am sure you will find advances that you helped to bring about by "casting your vote" with your exhibitors.

The charge is made that some of you fill your calendar with convention activities until you have no time left for more than a walk-through inspection of the exhibit area, waving your hand in greetings along the way. If this is true of you, reflect carefully whether it has been genuinely unavoidable.

A more serious charge is that your acceptance of one product and rejection of another is so firmly set that you actually avoid the exhibitor who would welcome the opportunity to move in the direction you favor. He is blind to your needs until you show him the way.

Your presence in the exhibit hall indicates that you are seriously serving the advancement of your area of interest in instructional materials and equipment because your future as a professional educator is directly affected by all progress bearing on your work.

Could there be a better reason for you to use the opportunity your national convention provides to stimulate progress among the commercial suppliers present?

Spend some time and thought with us—and we'll both go home rewarded.

—RICHARD C. GEARHART, *Cousino, Inc.*

*Oh yes, a postscript. Curb your curiosity and save your interest in the exhibits for the scheduled exhibit hours. It's sometimes easy to gain informal entry during the setting up period, but this is not the time to find your commercial friends in the mood to chat. Whether or not you've had the experience, you'll understand what I mean if I say it's a bit like dropping in on a new neighbor before the moving van has pulled away from the door.*—R.G.

## We're All Educators at Heart

THE SUPPLIER WANTS to be regarded as one of the group. Many, if not most of the executives in the audiovisual equipment and film fields have come out of the educational field. Often they are individuals who have made their mark in education before taking a tangent position on the business side. They are academic in their thinking and sincerely interested in the progress of the audiovisual movement.

The DAVI Convention is a gathering of audiovisual leaders—suppliers and users. Often the educational leaders are prone to shy away from the exhibit floor. One hears the same statement over and over again—"We know you and what you have, we'll see you when you come to call on us, or at some other convention. The time schedule is so crowded here."

What other convention and when?

The DAVI trade show is really a small one because we are a relatively small industry. Why can't each leader in the user field take a leisurely two or three hours among the exhibitors? Leading consumers and leading suppliers are usually good friends and acquaintances. In these informal talks each will have something constructive to say. It is surprising what is accomplished by those who take this approach.

These thoughts are not "off the cuff," nor are they necessarily my thoughts alone. Other exhibitors with whom I've talked during recent travels have much the same feeling. Exhibitors should not be ignored or "flipped off" with a wave of the hand. By the same token, suppliers should continue to send their top people to man the booths even though at times the contacts seem casual. Whenever possible they should have on hand their latest products and always be ready to sit down to a constructive exchange of ideas.

—E. N. NELSON, *Coronet Films*

## A $1,500,000 Spread

ONE and a half million dollars is a lot of money. Even if it were in $100 bills it would still take a long time to count.

Yet there will be one and a half million dollars spread out and awaiting your inspection on the exhibit floor at the 1960 DAVI Convention.

If you were to travel throughout the country visiting each source of audiovisual supply you would be away from home for many years. Luckily, you don't have to. At tremendous cost in time, money, travel, and effort the suppliers bring their products to you. The personnel in the booths are experts in their field, ready, willing, and able to help you make your program a better one.

There is always something new you can learn, and in Cincinnati every exhibit booth offers an opportunity. Be sure to see them all.

—Ben Peirez, *Viewlex Inc.*

*(Continued on next page)*

## And Here's Your Do's and Don'ts

A BORED EXHIBITOR (it was during one of those dull periods when the exhibitors outnumbered the AV gentry by 10 to 1) once remarked that many audiovisual educators remind him of the three famous monkeys with their hands over their eyes, ears, and mouths respectively: they come to the exhibits but see nothing, hear nothing, and tell nothing. He further remarked that many don't even bother to visit the exhibits at all!

Perhaps our unnamed exhibitor is guilty of exaggeration, but unfortunately, his remarks also contain much truth. Any exhibitor can tell you of DAVI friends who either never visit the exhibits, or scurry through them as though it were a last minute duty to be performed while dashing for the plane home.

This attitude is difficult to understand: The DAVI Convention is the one meeting of the year where members can see under one roof at one time the equipment and teaching materials of every major manufacturer. For many it may be the only visit to a convention throughout the year. It may be the one chance to discuss a problem with a manufacturer's representative, see what's new, or compare competing products. Surely, all these and many more factors make attendance at the exhibit a must.

Several years back when AASA polled its thousands of members on what they thought was the most important element in their annual conventions, over 50 percent replied: the Exhibits. If your "boss" feels that way, then maybe . . .!

Delegates to an educational convention seem to fall into four general categories.

**1** The I-was-just-too-busy-to-visit-the-exhibits type. This one is the most illogical of all, for in essence he is saying that the tools and materials of his trade don't matter. Why should he waste his valuable time at the exhibits. He has many important meetings to attend, he must see so-and-so, and then, of course, he has so many social commitments. Fortunately, he is in the great minority.

**2** The nobody-is-going-to-sell-me-anything type. He wanders through the exhibits and stops at none. This fellow is rather pitiful, for if he only knew, few if any of the exhibitors expect to make sales at the booths. If exhibitors had to depend on actual sales at the Convention to justify the money spent on their exhibits they wouldn't be there. More important, Mr. Pitiful is totally missing a fine opportunity by his silent tour. He doesn't seem to know that a goodly percentage of exhibitors are ex-educators; that many exhibitors are real experts in their particular field and in the use of their product or material in the teaching situation; that the exhibitors can help him with his problems, can tell him of successful uses and patterns in other areas of the country, and can tell him of interesting things being done by Mr. X and Mr. Y, things which he may never learn otherwise because they are not reported in any magazine. If Mr. Pitiful only knew it, he could obtain an inservice course merely by talking with selected exhibitors. And he wouldn't have to buy anything, either! Unfortunately for both AV and the exhibitors, this type predominates at any educational convention.

**3** The I-know-all-about-everything-you-have type. This one presents problems because you can't tell him anything—not even about the new "PDQ electronic gizmo" which is being shown for the very first time. He knows the exhibitor's product or material better than the representative; he tells you everything that's wrong with it; he extols your competitor; he wants to know why you can't make a combination TV-overhead-slide-flannelboard into one six-inch box to sell for $19.95. We love to see this type—in our competitor's booth.

**4** Finally there is Mr. Wonderful, the delight of every exhibitor. Here is your AV director who is well informed on equipment and materials, knows their applications in the curriculum, but despite his breadth of knowledge, still wants to see all, hear all, and tell all. He wants to see new products and materials, or significant improvements in existing items. He wants to hear what is happening elsewhere across the nation for he is not adverse to adapting some other person's success to his particular situation. And most of all, he wants to tell what he is doing so that it might be passed on to fellow DAVI members; he wants to give constructive suggestions on improving the product or developing something new to fit a real school need. In short, he makes the exhibitor feel that he is a member of the "team" whose purpose it is to improve the quality and efficiency of education. Thank goodness there are a fair number of his tribe.

Here's a short, suggested course of action:

| DO | DON'T |
|---|---|
| Plan your schedule so that you can spend at least several hours at the exhibits . . . SEE ALL. | Leave your visit to the exhibit to the last half hour of the last day . . . and SEE NOTHING. |
| Stop, and ask exhibitors about what's new or improved, or what's going on elsewhere . . . HEAR ALL. | Just stroll through the exhibits, never stopping to talk and discuss problems and products . . . and HEAR NOTHING. |
| Let the exhibitors know what is happening in your area; offer constructive criticism and indicate current school needs . . . TELL ALL. | Just say hello to an exhibitor, pick up a piece of literature, and run. Don't be one of those who . . . TELL NOTHING. |

—L. V. HOLLWECK, *RCA*

# PUDDLE VAULTING AND TEACHING AIDS

*Neil Lamper*

ONCE UPON A TIME there was a man who used a pole to vault across a puddle. He liked the added power of the pole and therefore began to use it often. The pole soon became a walking stick and before long the man didn't dare walk without it. It had become a crutch.

Two incidents that occurred recently are related to one another and to the parable of the pole. One was a walk around a huge arena set aside at a convention for display of school materials. Brightly-colored books and gay gadgets enough to qualify for a stall in any native marketplace were laid out in long rows. Projectors hummed quietly on automatic pilot, and language records lent a sort of United Nations atmosphere. Felt pens "as advertised in *LIFE*" pawed in nine colors at cards as proof of their virility. There were toys, trucks, beads, and boxes—even bagles to go with the free coffee, courtesy of the Ferris Nut Company. Truly, it was a fair at which one could marvel.

And much of the marvel was merited. Teaching aids need not be considered a plot by publishers to eventually replace teachers. It is not too difficult to hearken back in one's memory to the time when a textbook and a "knuckle ruler" were the only standard equipment in a schoolroom. Today one can smile at reading how Mark Hopkins hauled a skeleton over the Berkshires to use with his anatomy classes. Teaching aids now range from student-operated supermarkets to scale model nuclear reactors. And there is little doubt that the plethora of peg boards and flash card games adds to the realism and effectiveness of teaching.

But to ask if this is always the case is to bring up the second incident. The mother of a seventh grader was concerned over the degree to which the teacher relied on a geography workbook. Night after night mother and son searched for the answers to the blanks, puzzles, matching lists, tables, and crosswords in the workbook. The workbook followed a textbook, paragraph by paragraph. Exact answers were often elusive, yet the teacher marked many of them wrong, even those which had come—in desperation—from the Encyclopaedia Britannica. A conference with the teacher lead nowhere except to an accusation by the mother that the geography course was really no more than a correspondence course. The teacher agreed that if this was the way the thing looked, then perhaps it was so. Thus ended the reading.

Now going back to the huge display arena, even a casual stroller notes that crowds of teachers are gaily bartering greenbacks for gadgets. Representatives of publishing houses displaying only books are ignored to the extent that company representatives indulge in numerous coffee breaks. Books give no competition to filmstrips, felt boards, and leathercraft. A strange smell suggests itself here. At a time when it is agreed by many in education that we as a people are too much "cowboyed" and televised and too little prodded into thought, emphasis is on leather and film instead of books.

The question for the jury to decide then is what of the fate of teaching aids? Instructional materials are here to stay, but as with many other things of atomic significance, will men use them for good or ill?

A high school teacher who was not afraid of simple philosophic matters on a secondary level, used to ask his students, "A rock, is it good or bad?" And the answer, arrived at by dialogue, was that the goodness or badness resided in man and was shown in the use made of a stone. A man could build a rock garden or smash a window. This principle can be applied to guns, knives, leisure time, nuclear power, *Lady Chatterley's Lover,* and teaching aids.

An English professor has been toying with the idea of writing a series of provocative discussion questions to broaden the learning experiences possible through the use of great literature in Junior High. He has tried the idea locally and is discouraged by the way some teachers *assign* the discussion questions and let it go at that. An experience that has vital potentialities for building strength of character is made thin by too much Paladin and shorn of its virility by teachers who have none.

Many teachers are mature and use instructional materials as aids. There materials add color, drama, and a third dimension to what was once a drab and dull daguerreotype. All of the senses are used as canals for ferrying facts and feelings amounting to knowledge. School becomes a happy thing, constantly changing and challenging any student with work related to reality. This is as it should be.

But the crowds at the gadget counter and the distraught mother and son are related, too. A workbook is not a correspondence course, discussion questions are not take-home assignments and all math is not taught by making change with play money. Many good books still retain their identities as reservoirs of ideas. And instructional materials need an intelligent teacher to interpret ideas, to pursue them, and to place them within reach of students. To make a crutch of a pole is to forget how to walk.

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*Mr. Lamper is assistant professor of education, Western Michigan University, Kalamazoo. He was a contributor to the* NEA JOURNAL *in May 1958.*

# materials & equipment

## Burgert's Film Parade: Nature Study

*A Badger's Bad Day* (Grover Jennings Productions, P. O. Box 303, Monterey, Calif.)

Several small predatory animals start the day in search of food. The badger carefully avoids mother skunk and her family; a young raccoon escapes; the pheasant is protected by his color and absence of odor; the nimble squirrel finds safety; the coyote keeps his distance; the woodchuck hides in his burrow; and the opossum finds refuge in a tall tree. Gives primary children an insight into habits of smaller animals. Also helpful for language development. (400 ft, color)

*Forest Babies* (Grover Jennings Productions)

It is late spring and in the forest the young animals are beginning to appear. We see the fawn, bear cubs, young porcupine, mink, raccoon, and badger. The opossum mother cares for her young and the mother skunk herds her exploring family. A coyote looks after her pups. Later in the summer we are given an opportunity to see how the young have grown. Stressed also is the protection furnished by nature, and the learning and growing activities of young animals. Narration uses poems about animals. (400 ft, color)

*Thunder and Lightning* (Young America Films, 18 E. 41st St., New York).

For the beginning science groups this film gives a lucid account of what causes thunder and lightning, the principle of electrical imbalance, and the difference in the speed of light and sound. The dangers of lightning are described and fallacies regarding it exploded. (400 ft, b-w)

*How Plants Reproduce* (Young America Films)

Many films have been made on this topic but few give a more clear-cut, easily understood explanation than this one. It identifies and explains the function of the major parts of plants and explains the purpose of color and odor. Fertilization, cell division, and growth to the seed state is followed carefully. The film explains the variations in form that flowers take and how composite flowers are organized. Good photography, adequate animation, and excellent art work make this an effective teaching film. (400 ft. b-w)

*The Rabbit that Runs on Snowshoes* (Earl L. Hilfiker, 284 Somershire Drive, Rochester 17, N. Y.)

For many animals winter brings hunger, danger, and suffering. Nature provides the snowshoe rabbit a white coat and thickened foot pads to meet the hazards of the winter snows, and to protect him from his natural enemies, the wolf, lynx, bobcat, fox, coyote, and weasel. Spring sees his coat change to brown, and as the mating season begins, he fattens. (1100 ft, color)

*World in a Marsh* (McGraw-Hill Textfilm, 330 W. 42nd St., New York 18)

This Canadian Film Board Production combines beautiful photography and authentic sound effects to give one an intimate contact with the great variety of life that exists in and on the surface of a marsh. One meets the flowers, birds, insects and animals that live above the water. In the marsh, the snails, nymphs, turtles, dragonflies, water bugs, and frogs help maintain the balance of nature. Life is complex and the cycle of reproduction, life and death is ever present. Truly a beautiful production. (800 ft, color, $150)

*The Changing Forest* (McGraw-Hill)

The forest is a closely integrated community of plants and animals. It represents an intense struggle for light, moisture and food, moving through a succession of stages. Period One sees a prevalence of smaller plants — aspen and birch. This is followed by Stage Two, when the taller spruce and pine predominate. The final act sees the older birch and pine crowded out by the maple. This Canadian Film Board Production follows the patterns of the animals of the forest and their seasonal habits and problems. An excellent film to analyze the annual and long time cycles that apply to nature. (750 ft, color)

*Knowing Woods: Their Uses* (McGraw-Hill)

Teachers of woodshop will find this film of interest. It describes basic characteristics of various types of lumber, how lumber is classified, and grades and principles in wood selection. (800 ft, b-w)

*The Sea Otter* (Arthur Barr Productions, 1265 Bresee Ave., Pasadena, Calif.)

Once threatened with extinction along the Pacific Coast by the ruthless trader, the sea otter is making a successful effort to survive. Herds that live off the coast are increasing in size and will continue to grow under government protection. This film reviews their natural habitat, their feeding and breeding activities, and their natural enemies. An unusually fine film for natural science, and testimony to the effectiveness of a well-planned program of conservation. (400 ft, color, $100)

### Making Posters

*Poster Making: Design and Technique* (Bailey Films, 6509 De Longpre Ave., Hollywood 28.)

This film analyzes the principal factors—color, simplicity, layout, choice of letters, and optical spacing—that give strength to posters. It identifies the basic tools needed to plan, prepare, and finish a poster. Attention is given to several trial layouts. After a choice is made, the design is transferred from the tracings to poster board and the layout is finished. This is an attractive film and carries a lucid and complete narration. (400 ft, color, $100)

*Poster Making: Printing by Silk Screen* (Bailey Films)

A companion film to the one listed above, this film shows how posters can be reproduced by the silk screen method. Major concepts considered are: (1) elements of good design, (2) making the frame, (3) preparation of the stencil, (4) preparing the poster paint, (5) touch technique, (6) lacquering the film and application of photo techniques, and (7) final printing. The step-by-step explanation is easy to follow and will stimulate the art student to try. (600 ft, color, $135)

# Looking into the Future with Bill King

Mr. King

IT WAS THE CUSTOM at the start of each new year back in the olden days to have wise men foretell the future. Such individuals as Nostradamus and Jules Verne did exceptionally well in predicting events on a long-range basis. It may well be that your present prognosticator will not do as well, even though he probably has more evidence with which to work.

This is an attempt, based on what we have today, to predict the instructional equipment that will be available for the teacher of tomorrow. How far in the future will vary according to types of equipment. Some are almost here. Others may be just a little farther away. It would be interesting to have your reactions to see whether or not your philosophy and predictions agree with those stated here.

The teacher of tomorrow, and let us hope it is tomorrow, will recognize that a central sound system in a school building is more than an electronic messenger boy. Classroom teachers will be "wired for sound" in a way similar to executives in industrial plants. If you recall, some of the DAVI leaders responsible for running the Convention at Minneapolis were provided with units permitting individuals to call them when needed. This writer foresees a transmitting unit in each school building allowing the principal or office secretary to establish two-way communication with classroom teachers. The unit (like the one now in use) will be about the size of a hearing aid.

Along with this, each school will have a closed-circuit radio and television installation. In the beginning each classroom will have a large "picture frame" television receiver mounted on the wall which will receive all types of visual devices originating from a central source. The teacher will use the inter-com system described above to notify the center as to time and title of the film, filmstrip or video-tape desired.

The large screen will serve another function. This writer remembers a number of years ago when he had a "wireless" radio player. A standard radio receiver could, without wires, pick up sound from this record player within a room or apartment. Don't you think it's possible that television cameras of tomorrow, small enough to be easily handled by the classroom teacher and inexpensive enough for all schools to own, will be so equipped that they will be able to transmit a program into classrooms without cables? Those who saw some of the bowl games New Year's Day on television were probably aware that officials were "wired for sound" and that, without cables, they were able to transmit a signal which was in turn picked up and re-broadcast over the network. Video signals should in time be able to operate the same way so that a closed-circuit television camera will be able to pick up a program and send it into one or more classrooms. When this happens, color will be used exclusively.

### "Desk of the Future"

Recently one of the seating companies devised a "desk of the future" in which each pupil had his own built-in television screen. It's not unlikely that desks of this type might be used for individual instruction in the same way that record players and tape recorders with earphones are used today for small group instruction.

It seems almost certain that the motion picture of tomorrow, so far as classroom use is concerned, will be 8mm film rather than 16mm. In all probability each school will have its own production center and the film purchased by the school will come to the school already magnetically striped, so that when the camera is taken on a field trip the teacher or the pupils will be able to add their own commentary to make the experience more meaningful. Inexpensive, lightweight, 8mm magnetic projectors will be standard in all classrooms.

For production within the school, a video-tape unit will be used in conjunction with the wireless television camera (already described). This will allow the teacher or administrator to produce material that will be recorded on video tape and played back through a central system into each classroom as desired. In this way, some of the objections of present educational television can be removed. The teacher will have the opportunity to preview and to replay sections of the program at will.

It is the feeling of the writer that radio will once more come into its own, but radio in this case will be world-wide. World-wide reception will be as good as local reception is today and the television in the classroom will have an FM tuner attached to the set which will enable the teacher to tune in news and other broadcasts from any section of the world. Shortly after this, world-wide television will be experienced by pupils in the classroom.

It has been said that the armed forces are now experimenting with material that looks like putty and which can be attached to a wall and become almost invisible. This little dab of material will pick up sounds within the room and, without wire, feed them to a tape recorder located some distance away. Small, very lightweight tape recorders, with exceptional quality will become standard equipment in every classroom to be taken home by teachers at night. When taken into the community these lightweights will allow the school to take full advantage of community resources.

These tape recorders will record in stereo and when plugged into the sound system in the classroom will afford excellent quality in sound.

There is no doubt that some of the work which is done today by the electronic experts for our armed forces will make some of the equipment described here a reality before too many years pass. A major problem will be to find ways of insuring proper educational use by the classroom teacher for these new devices as they come along. We will still have the problem of educating administrators and board members so that they will purchase and accept these innovations as teaching tools rather than "gadgets," or "frosting on the educational cake." We can leave the development of these materials to the engineer, but it's up to the educator to "sell" the community on their importance.

—WILLIAM H. KING

# Tiemann and Miller Win High Posts in DAVI Elections

Dr. Tiemann

Dr. Miller

WHEN THE BALLOTS in the 1960 DAVI elections were counted at NEA headquarters Monday, January 11 Ernest Tiemann emerged as successful candidate for the post of president-elect and Clyde Miller as vice president. (James D. Finn, as a result of the elections last year, assumes the presidency at the DAVI Convention in Cincinnati.)

President-elect Tiemann made his mark in audiovisual circles by building up a strong audiovisual center at the University of Texas and through active membership in a number of DAVI committees. Clyde Miller's election is recognition of his fine work as DAVI membership chairman for the past two years as well as for professional achievements as director of the division of audiovisual education for the State of Ohio Department of Education.

DAVI can also be congratulated on its choice of delegates-at-large: Lee Cochran, A. W. VanderMeer, and Wesley Meierhenry, none of whom need introduction.

Election officials who arrived in time for lunch with the entire national staff on January 11 were Roger Burgess, associate director of communications, Methodist Board of Temperance, and Thomas E. Batson, teacher of architecture, McKinley Technical School, both Washington, D. C. The third official, Thomas C. Sheehan, assistant director of the audiovisual instruction department, District of Columbia public schools, arrived later. Florence Fan was in charge of elections and luncheon hostess.

## Dual Citation

Irene F. Cypher and Don G. Williams were recipients of two annual awards given by the New York State Audio-Visual Council at its 12th annual meeting in Syracuse December 11. The citations were in recognition of outstanding leadership and for "pioneering effort in the improvement of instruction through the use of audio-visual materials and for wise and helpful counsel to others working in this field."

Dr. Cypher is professor of education at New York University. Dr. Williams accepted an appointment last fall to the University of Kansas City (Mo.) after 11 years as director of the audiovisual center and professor of education at Syracuse University. He has similar titles in his new post.

## B. A. Aughinbaugh

Among the earliest pioneers in the audiovisual field was B. A. Aughinbaugh who died December 14 in Columbus, Ohio, after a brief illness. Often called the "father of visual education," his cherished interest was educational films for children. During his 25 years as director of audiovisual education in the Ohio Department of Education, the state's film library grew from two reels to 6000 titles.

At the outset of his career he had been a supervisor of schools in the Philippines and later was with the Federal Indian Service in Minnesota. He was the author of a booklet, *Know Ohio,* distributed in Ohio schools, and had written the script for and directed 23 Ohio travelog movies.

He is survived by his wife, Edith Aughinbaugh, who worked with him constantly during the nearly 52 years of their married life, and a son, Robert A. Aughinbaugh of Mineral City, Ohio.

## Notes On Individuals

DAVID P. BARNARD, professor and head of the audiovisual center at Stout State College, Menomonie, Wisconsin, will be expanding his facilities as soon as new construction is completed giving him four times his present floor space. Recent developments affecting the center include the initiation of an AV major on the masters level and a special act of the Wisconsin legislature that allows him to operate a free-revolving account to re-invest profits of film productions into other productions, equipment, and materials. In the production area, the motion picture production class has just completed a new film entitled *Printing: Platen Press Made Ready. — Alumni Newsletter,* Indiana University.

• • •

GENE FARIS, a member of L. C. Larson's staff at Indiana University, recently earned his doctorate from that institution with a dissertation in the AV communication area. Dr. Faris was a contributor to the December 1958 issue of AVI with an article on student assistants.

• • •

BETTY STOOPS writes that she has completed her doctoral dissertation entitled, *Audio-Visual Competencies Useful in Teaching Four Subjects in the Intermediate Grades.* On January 4 Miss Stoops assumed duties as instructor in the Department of Instructional Materials at Southern Illinois University, Carbondale. She was at Wayne State University before taking a two-years leave.

• • •

ELLSWORTH TOMPKINS became executive secretary of the National Association of Secondary-School Principals January 1 upon the retirement of PAUL ELICKER who had held the position since 1940. Dr. Tompkins, who moved to the top post from associate secretary, has been on the NASSP staff since 1955. He is a Princeton graduate with a doctorate in education from Harvard.

## Outstanding Texts From Holt-Dryden

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**DISPLAY FOR LEARNING: MAKING AND USING VISUAL MATERIALS**
**Marjorie East, The Pennsylvania State University**

Step-by-step instructions and illustrations demonstrate how a teacher can prepare and use visual materials for better teaching. *1952 306 pages $4.50*

**AUDIO-VISUAL METHODS IN TEACHING, Revised**
**Edgar Dale, The Ohio State University**

Offers the *why*, *what*, and *how* of audio-visual aids for the classroom teacher. Not only does the book include general information on material and equipment, but it also gives specific classroom applications for various subject matter fields. Fully illustrated. *1954 534 pages $7.75*

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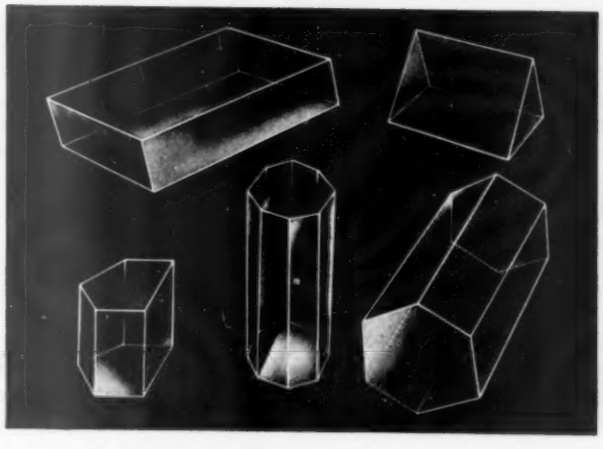

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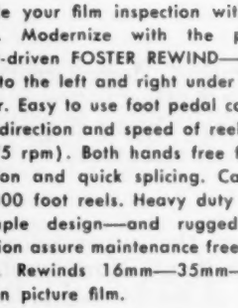

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# CINE Showing Is Glittering Affair

FIVE AWARD-WINNING American films and an Italian Grand Prix winner at the 1959 Venice International Film Festival were shown in the NEA auditorium in Washington, D. C., December 10, to a capacity audience of government, diplomatic, and educational personages interested in good cinema. All six films were winners in the Documentary and Short Film Section.

Gabriele Paresce, press counselor of the Italian Embassy, made the presentations to the American winners in an awards ceremony preceding the film showings. Recipients of silver statues were: *Skyscraper* produced by Shirley Clarke, Willard Van Dyke, and Irving Jacoby (winner in the places, people, and folklore category); *Moonbird* produced by John Hubley (cartoon films category); and *My Own Yard to Play In* produced by Phil Lerner (social documentary).

Receiving diplomas were *Appalachian Spring* produced by Peter Glushank, Nathan Kroll, and Martha Graham (television films category) and *Life of the Molds* produced by Irving Jacoby and Willard Van Dyke (films for children).

The Italian Grand Prix winner, *The Alphabet Is Not Enough* (an English translation of the title) was brought to this country especially for the NEA screening. It is a compassionate portrayal of efforts to solve an urgent social problem through adult education.

CINE Coordinator Harold Wigren (left) and Chairman Ralph Hoy in brief consultation just before the awards program began.

William G. Carr, executive secretary of the NEA, made the opening speech and CINE Chairman Ralph L. Hoy, Aluminum Company of America, presided during the awards program. The December event culminated two years of service as CINE coordinator for Harold Wigren, who left early in January for Houston (see below). Anna L. Hyer, executive secretary of DAVI, will replace Dr. Wigren with Joyce R. Farber as her assistant.

# Campion Replaces Wigren On NEA Staff

LEE E. CAMPION, director of the audiovisual department for the Cooperating Schools of St. Louis County, joined the NEA staff February 1 as educational television consultant. Mr. Campion is on a year's leave of absence from his St. Louis post. Like Harold Wigren, whom he replaces, he will be housed in the DAVI offices.

Mr. Campion

In St. Louis Mr. Campion has for the past six years been a member of the Operations Committee of KETC-TV and for the past nine years a visiting lecturer in audiovisual courses at Washington University. He is a member of the DAVI Board of Directors and of the DAVI Field Service Committee for whom he has made several surveys. He was chairman of the County and Cooperative Committee which has since been discontinued in favor of reorganization as an occupational interest group. The new educational television consultant is also a life member of NEA.

Dr. Wigren, who took leave of the DAVI offices January 8, will resume duties as audiovisual director for the Houston public schools. Among Dr. Wigren's contributions while associated with NEA have been two Title VII

seminars for the U. S. Office of Education which he planned and conducted in cooperation with O. L. Davis of ASCD; three ETV seminars which he directed for the NEA (as well as shepherding the resulting publications through the press); and numerous other conferences and one-day meetings throughout the country to which he made available his not inconsiderable knowledge of educational television. Dr. Wigren can also be credited with setting the Committee on International Non-Theatrical Events solidly on its course.

Commenting on his departure, Dr. Hyer said she was sure that Dr. Wigren, regardless of where he is located, will continue to make a contribution of national scope. She added that DAVI is fortunate to have the services of Mr. Campion during the next year. With the expansion of regional activities in connection with the NEA-Title VII contract, it is more important than ever to retain a staff member with a sound educational television and public school background, Dr. Hyer said.

## Conferences

"You will undoubtedly receive many favorable reports on the excellent joint conference held last week at Florida State University," writes Richard Gearhart of Cousino Electronics Corporation. "This is to urge your editorial recommendation in AUDIOVISUAL INSTRUCTION of that conference as a model for planning similar joint meetings of modern language and instructional materials personnel.".

The conference, which took place December 3-5, was sponsored by the Department of Modern Languages and Department of Audio-Visual Education at Florida State University, the Florida Audio-Visual Association, and the NDEA Office of the Florida State Department of Education.

• • •

The autumn statewide conference on audiovisual education in Massachusetts was held November 18 in the junior high school at Gardner. Sponsors were the audiovisual office of the State Department of Education, the Massachusetts Advisory Committee on Audio-Visual Education, and the Massachusetts AV Association.

Among speakers were Owen B. Kiernan, Commissioner of Education for Massachusetts, and Irene Cypher, professor of education, New York University. Section discussions centered on the audiovisual roles of superintendents, principals, supervisors, curriculum specialists, AV coordinators, and teachers. The theme was utilization.

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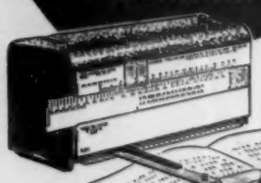

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# AV and Conditions for Quality Teaching

THE NEA's Department of Classroom Teachers has come out with a report on a special study that will be of interest to readers of this magazine—*Conditions of Work for Quality Teaching*. A series of charts throughout the 117-page book shows how school personnel evaluated the importance of various factors affecting "quality teaching" by indicating the value they would attribute to policy statements concerning these factors.

Reproduced here in slightly varied form is the chart indicating *the Desirability of a Policy Statement on Source and Supply of Resource Material for Instruction.*

| | VITAL | IMPORTANT | DESIRABLE | NOT DESIRABLE | NO REPLY |
|---|---|---|---|---|---|
| Teachers | 28% | 44% | 13% | 9% | 6% |
| Librarians-Counselors | 29% | 38% | 18% | 13% | 2% |
| Principals-Asst. Principals | 27% | 42% | 17% | 11% | 3% |
| Superintendents-Asst. Supterintendents | 36% | 49% | 9% | 7% | 0 |

The report goes on to say: "The 1957 study of teacher status * by the NEA Research Division found that 16.1 percent of the elementary-school teachers thought that the supply of teaching materials and equipment was unsatisfactory, with 19 percent of secondary teachers indicating a similar belief. Nearly half of all teachers lack confidence in their use of audiovisual equipment and materials, which indicates that such items could not have been plentifully used. Such figures indicate why educational staffs frequently recommend that provision of an adequate supply of instructional materials and teaching aids be incorporated into local school policy."

The references to instructional materials are contained under the chapter heading "Time and Means: The Right to a Manageable Task." Other chapters are "Professional Recognition: The Right to Professional Status," "Fair Treatment: The Right to Personal Consideration," "Good Administration: The Right to Leadership Opportunities," and "Security and Welfare: The Right to Economic Satisfaction." The booklet is available for $1.25 from the Department of Classroom Teachers, NEA, 1201 16th St., N.W., Washington 6, D. C.

* "The Status of the American Public School Teacher." *Research Bulletin* 35: 1-63; February 1957.

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# The Case for the Visual in Language Learning

WHAT IS THE WORTH of the visual in teaching modern foreign languages?

Not much if you weigh the literature on the subject to date.

More than given credit for thus far, according to one school of thought, articulated at Wayne State University last fall by George Borglum and J. J. McPherson.

Readers who were introduced to the whole absorbing question of language laboratories in the September issue of AVI will find a "thoughty" piece in the October issue of *French Review* (pages 53-58) by Drs. Borglum and McPherson which puts a premium on the visual, particularly if it is assumed that integrating "culture" with language teaching is important — and Borglum and McPherson think it is.

*(Continued on page 60)*

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The way the authors explain it, bisensory audiovisual techniques make possible an experience with three dimensions—one, the literal meaning, which, the authors say "enables teacher and students to by-pass their own language and keep the thinking process in the groove of the target language" (this would seem to assume some knowledge already of the second language); two is the cultural significance (the object, action, or concept illustrated is situated in the native environment); three is the psychological dimension (the urge of the viewer to identify himself with what he sees). "Sound symbol, scene, and emotional concern get inextricably associated in meaningful experience," write the authors.

Another concept treated in the article is *language as behavior*. The authors take as an example the picture of a girl skipping rope. To learn the expression "to skip rope" is the immediate object, but everything about the girl's attire and the scene portrays the daily life of a little girl in a French village.

"When we multiply this kind of visual experience hundreds and thousands of times with photographs selected for the dual purpose of illustrating specific language structures as well as showing how the people who speak the language live and think, we move into an area of comprehension which can best be described by the term 'language as behavior'," the authors write. The important thing is to have many visuals—if possible as many pictures of little girls as there are statements about them. A total of 30 to 40 pictures can be shown profitably in about 10 minutes, the authors maintain. The rapid sequence of different pictures induces automatic association and is much more effective than the common practice of going over details of a single picture with a pointer, according to the article.

## Language Juke Boxes

The University of Michigan is installing foreign language juke boxes for students of French, Spanish, and other modern languages, according to the *Phi Delta Kappan* of December 1959. Students can listen to the language of their choice simply by dialing a device similar to a telephone. The first-year French course, for instance, contains more than 800 short lessons. The equipment was designed by F. Rand Morton, director of the University's language laboratory and engineered by Stromberg-Carlson.


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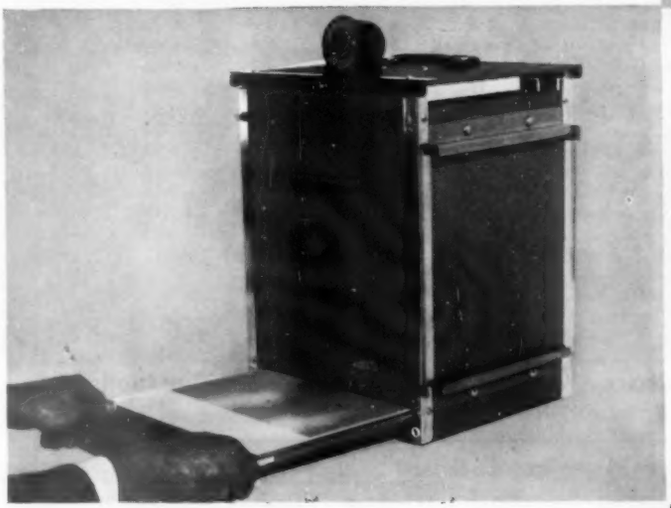

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# Research Monograph Cites AV Shortages

THE CHARTS BELOW (Tables 14 and 15) are reprinted from *Mathematics and Science Teaching and Facilities*, Research Monograph 1959-M1, Research Division, NEA. They are reproduced here so that readers can consider audiovisual shortages in the light of other limitations reported. The monograph indicates that shortage of AV materials was cited by about one fourth of the schools reporting limitations in mathematics instruction. Note that the figures are broken down according to size of schools: 27.2 percent of small schools, 19.9 percent of medium-size schools, and 14.6 percent of large schools. Note also the breakdown of audiovisual shortages reported for science instruction: 26.5 percent of small schools, 18.6 percent of medium-size schools, and 8.3 percent of large schools. The 49-page monograph is available for 50 cents from NEA Publications Sales, 1201 Sixteenth Street, N. W., Washington 6, D. C. Money requested with orders of less than $1.

**TABLE 14.—PERCENT OF SCHOOLS REPORTING SPECIFIED LIMITATIONS IN MATHEMATICS INSTRUCTION**

| Limitation | All secondary schools | | | |
|---|---|---|---|---|
| | Small | Medium | Large | Total |
| 1 | 2 | 3 | 4 | 5 |
| Shortage of models and apparatus | 55.5% | 35.3% | 20.6% | 47.0% |
| Lack of desire on part of students to take courses | 45.8 | 32.7 | 22.9 | 40.3 |
| Lack of ability on part of students who do enroll | 32.7 | 24.8 | 28.5 | 30.3 |
| Shortage of classroom space | 29.8 | 28.2 | 28.1 | 29.2 |
| Shortage of qualified teachers | 27.0 | 27.4 | 30.8 | 27.5 |
| Lack of adequate guidance and counseling service | 28.3 | 24.0 | 13.0 | 25.7 |
| **Shortage of audio visual materials** | **27.2** | **19.9** | **14.6** | **24.1** |
| Lack of interest on part of students who do enroll | 25.0 | 24.1 | 17.0 | 24.1 |
| Shortage of reference materials | 28.4 | 14.1 | 14.6 | 23.4 |
| Shortage of satisfactory textbooks | 5.0 | 5.9 | 9.5 | 5.7 |
| Other | 3.6 | 3.6 | 6.3 | 3.8 |
| Schools reporting serious limitations in one or more of the categories above | 91.6 | 82.3 | 75.5 | 87.7 |
| Schools reporting no limitations in any of the categories above | 8.4 | 17.7 | 24.5 | 12.3 |

**TABLE. 15.—PERCENT OF SCHOOLS REPORTING SPECIFIED LIMITATIONS IN SCIENCE INSTRUCTION**

| Limitation | All secondary schools | | | |
|---|---|---|---|---|
| | Small | Medium | Large | Total |
| 1 | 2 | 3 | 4 | 5 |
| Shortage of laboratory work stations | 56.8% | 43.3% | 38.3% | 51.5% |
| Shortage of experimental apparatus | 58.4 | 41.8 | 28.9 | 51.0 |
| Shortage of classroom space | 41.2 | 40.8 | 42.7 | 41.3 |
| Shortage of laboratory supplies | 42.2 | 24.2 | 19.4 | 35.4 |
| Lack of desire on part of students to take course | 37.8 | 31.5 | 22.9 | 34.8 |
| Shortage of qualified teachers | 32.6 | 30.8 | 33.6 | 32.2 |
| Lack of ability on part of students who do enroll | 27.6 | 21.6 | 28.1 | 26.1 |
| Inadequacy of 50-55 minute period for laboratory sessions | 26.0 | 22.2 | 24.5 | 24.9 |
| Shortage of reference materials | 28.5 | 17.4 | 14.6 | 24.3 |
| Lack of interest on part of students who do enroll | 24.5 | 21.9 | 21.7 | 23.5 |
| **Shortage of audio visual materials** | **26.5** | **18.6** | **8.3** | **22.5** |
| Lack of adequate guidance and counseling services | 22.1 | 20.3 | 13.8 | 20.9 |
| Shortage of satisfactory textbooks | 4.9 | 4.5 | 11.9 | 5.4 |
| Other | 2.8 | 3.8 | 3.6 | 3.1 |
| Schools reporting serious limitations in one or more of the categories above | 93.1 | 86.2 | 85.8 | 90.6 |
| Schools reporting no limitations in any of the categories above | 6.9 | 13.8 | 14.2 | 9.4 |

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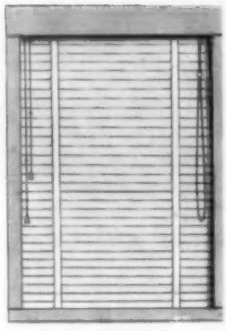

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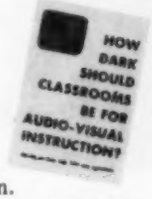


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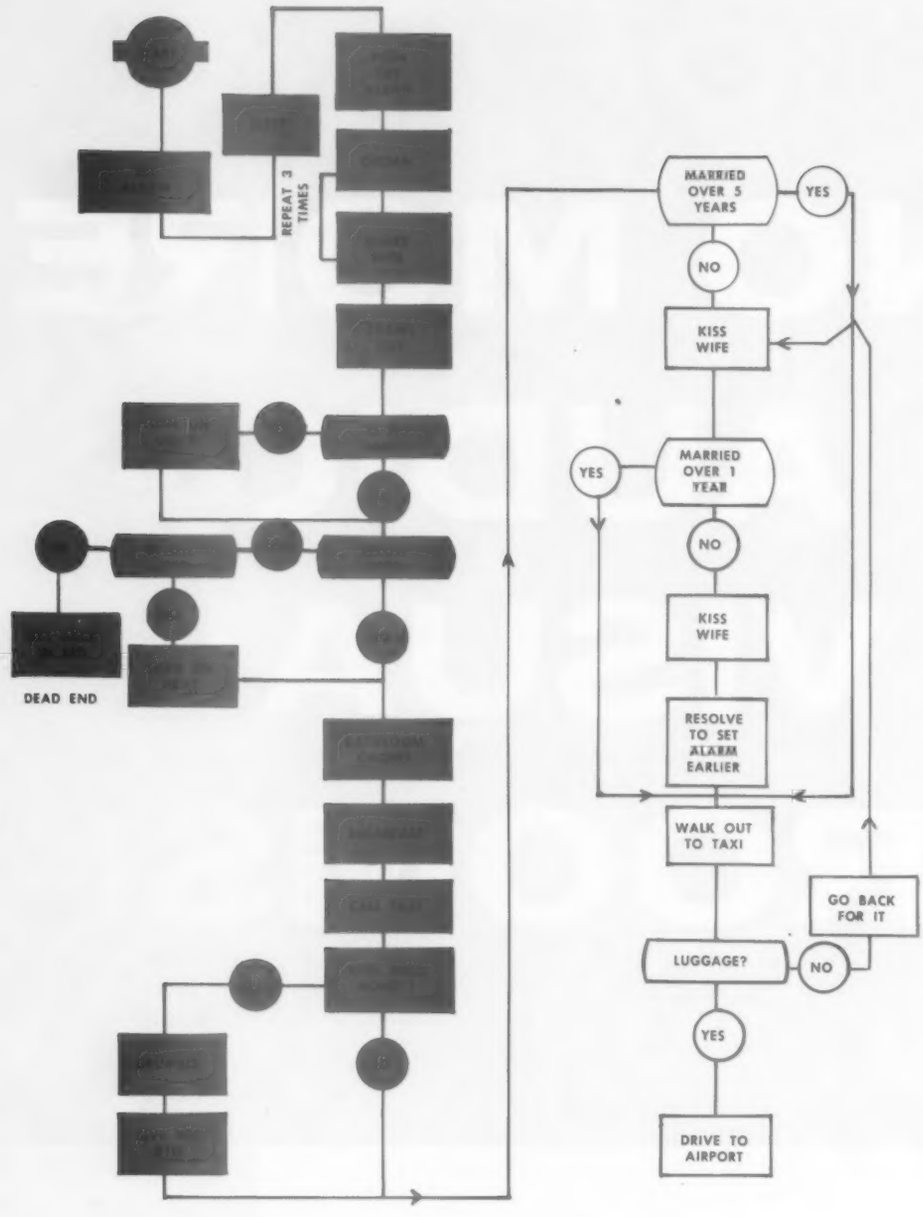


# A Program for Getting to Convention / *by Anna L. Hyer*

MUCH IS BEING WRITTEN about teaching machines and programming for machines. The flow chart or block diagram is the heart of all true programming. A flow chart, we are told, should show the exact sequence of operations including each branch and its alternatives. The object of the flow chart is to present the overall method of attack, without details. To illustrate the point we offer this bit of whimsey which has been making the rounds of computer laboratories for several years. The source of the original is from the book by R. V. Andree, *Programming the IBM 650,* Henry Holt and Company, Inc. 1958.

*At the new Cornwall (N. Y.) Central High School*, selected by A.A.S.A. for its exhibit of outstanding school designs, Thomas D. Shost, Supervising Principal, says:

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